WHAT IS CLAIMED IS:

1.   In a system comprising a network and at least one mobile station (MS) for enabling communications with the at least one MS, the network including one or more base stations (BSs) capable of transmitting a rescue channel to a MS having a connection with the network that has become a potentially failing connection for assisting in rescuing the connection, a method for synchronizing transmission of the rescue channel with MS attempts at receiving the rescue channel to increase a likelihood that the MS will receive the rescue channel and assist in rescuing the connection, the method comprising:

transmitting the rescue channel from one or more BSs at a time during each of one or more SUPER_ATTEMPT time intervals;

configuring the MS to attempt to receive the rescue channel from the one or more BSs during each of one or more SUB_ATTEMPT periods, wherein a predetermined number of SUB_ATTEMPT periods are contained in one SUPER_ATTEMPT time interval; and

coordinating the transmission of the rescue channel from the one or more BSs with the MS configurations to increase the likelihood that the MS is configured to receive the rescue channel from a particular BS at a time when the particular BS is transmitting the rescue channel.

2.   The method as recited in claim 1, further including configuring the MS to attempt to receive the rescue channel from one BS at a time in a sequence during each of the one or more SUB_ATTEMPT periods, the sequence defined by MS ordering criteria based on MS probability values assigned to each of the BSs in the sequence, the MS probability values representing the likelihood that the rescue channel transmitted by the BS will be received by the MS.

3.   The method as recited in claim 2, wherein the sequence is altered during each SUPER_ATTEMPT time interval by changing the MS ordering criteria at each SUPER_ATTEMPT time interval.

4.   The method as recited in claim 2, further including transmitting the rescue channel from the one or more BSs at a time in a sequence, the sequence defined by network ordering criteria based on network probability values assigned to each of the BSs in the sequence, the network probability values representing a likelihood that the rescue channel transmitted by the BS will be received by the MS.

5.   The method as recited in claim 1, further including executing a first search tree within a first SUPER_ATTEMPT time interval, the execution of the first search tree comprising:

configuring the MS during a first SUB_ATTEMPT period to attempt to receive the rescue channel from one or more BSs, and determining whether the attempt to receive the rescue channel from the one or more BSs resulted in the MS receiving the rescue channel;

selectively reconfiguring the MS during a subsequent SUB_ATTEMPT period to attempt to receive the rescue channel from a modified set of BSs in accordance with the first search tree and results from a previous SUB_ATTEMPT period, and determining whether the attempt to receive the rescue channel from the modified set of BSs resulted in the MS receiving the rescue channel;

repeating the selective reconfiguration of the MS and the attempts to receive the rescue channel as dictated, if at all, by the first search tree and the results of previous selective reconfigurations; and

terminating the selective reconfiguration of the MS and the attempts to receive the rescue channel when an end of the first search tree is reached, or the BS transmitting the rescue channel is identified, or when an end of the first SUPER_ATTEMPT time interval is reached.

6.   The method as recited in claim 5, further including executing one or more different search trees in subsequent SUPER_ATTEMPT time intervals for identifying one or more BSs transmitting the rescue channel.

la-538940

7.   The method as recited in claim 5, further including applying probability values assigned to each of the BSs to the steps of configuring the MS during the first SUB_ATTEMPT period, selectively reconfiguring the MS during the subsequent SUB_ATTEMPT period, and repeating the selective reconfiguration of the MS and the attempts to receive the rescue channel, the probability values representing a likelihood that the rescue channel transmitted by the BS will be received by the MS.

8.   The method as recited in claim 7, further including recomputing the probability values assigned to each of the BSs at each SUB_ATTEMPT period, taking into account changing conditions and the result of attempts to receive the rescue channel during previous SUB_ATTEMPT periods.

9.   The method as recited in claim 7, wherein the probability values assigned to each of the BSs are adjustable to account for varying SUB_ATTEMPT durations, fades, degraded reception of the rescue channel, or pilot strength information made available to the network prior to a start of the potentially failing connection.

10.   The method as recited in claim 5, wherein prior to executing the first search tree, the method further includes:

defining a plurality of search trees, each search tree for identifying the BS transmitting the rescue channel from within the plurality of BSs;

computing a time needed to traverse each search tree; and

identifying the first search tree as the search tree having a lowest traversal time.

11.   The method as recited in claim 5, wherein prior to executing the first search tree, the method further includes utilizing dynamic programming or memo-ization algorithms to identify the first search tree as the search tree having a lowest traversal time.

12.   The method as recited in claim 11, further including executing the dynamic programming or memo-ization algorithms on generic N-sector search trees to identify the generic N-sector search tree having a lowest traversal time, and pre-storing resulting tree formulas for each of the N-sector trees having the lowest traversal times prior to a start of the

5   potentially failing connection.

13.   In a system comprising a network and at least one mobile station (MS) for enabling communications with the at least one MS, the network including one or more base stations (BSs) capable of transmitting a rescue channel during each of one or more SUPER_ATTEMPT time intervals to a MS having a connection with the network that has

10   become a potentially failing connection for assisting in rescuing the connection, a method for synchronizing transmission of the rescue channel with MS attempts at receiving the rescue channel to increase a likelihood that the MS will receive the rescue channel and assist in rescuing the connection, the method comprising:

configuring the MS to attempt to receive the rescue channel from the one

15   or more BSs during each of one or more SUB_ATTEMPT periods, wherein a predetermined number of SUB_ATTEMPT periods are contained in one SUPER_ATTEMPT time interval; and

coordinating the transmission of the rescue channel from the one or more BSs with the MS configurations to increase the likelihood that the MS is configured to receive the rescue channel from a particular BS at a time when the particular BS is transmitting the

20   rescue channel.

14.   The method as recited in claim 13, further including configuring the MS to attempt to receive the rescue channel from one BS at a time in a sequence during each of the one or more SUB_ATTEMPT periods, the sequence defined by MS ordering criteria based on MS probability values assigned to each of the BSs in the sequence, the MS probability values

25   representing the likelihood that the rescue channel transmitted by the BS will be received by the MS.

15.   The method as recited in claim 14, wherein the sequence is altered during each SUPER_ATTEMPT time interval by changing the MS ordering criteria at each SUPER_ATTEMPT time interval.

16.   The method as recited in claim 13, further including executing a first

5   search tree within a first SUPER_ATTEMPT time interval, the execution of the first search tree comprising:

configuring the MS during a first SUB_ATTEMPT period to attempt to receive the rescue channel from one or more BSs, and determining whether the attempt to receive the rescue channel from the one or more BSs resulted in the MS receiving the rescue

10   channel;

selectively reconfiguring the MS during a subsequent SUB_ATTEMPT period to attempt to receive the rescue channel from a modified set of BSs in accordance with the first search tree and results from a previous SUB_ATTEMPT period, and determining whether the attempt to receive the rescue channel from the modified set of BSs resulted in the MS

15   receiving the rescue channel;

repeating the selective reconfiguration of the MS and the attempts to receive the rescue channel as dictated, if at all, by the first search tree and the results of previous selective reconfigurations; and

terminating the selective reconfiguration of the MS and the attempts to

20   receive the rescue channel when an end of the first search tree is reached, or the BS transmitting the rescue channel is identified, or when an end of the first SUPER_ATTEMPT time interval is reached.

17.   The method as recited in claim 16, further including executing one or more different search trees in subsequent SUPER_ATTEMPT time intervals for identifying one

25   or more BSs transmitting the rescue channel.

18. The method as recited in claim 16, further including applying probability values assigned to each of the BSs to the steps of configuring the MS during the first SUB_ATTEMPT period, selectively reconfiguring the MS during the subsequent SUB_ATTEMPT period, and repeating the selective reconfiguration of the MS and the attempts to receive the rescue channel, the probability values representing a likelihood that the rescue channel transmitted by the BS will be received by the MS.

19. The method as recited in claim 18, further including recomputing the probability values assigned to each of the BSs at each SUB_ATTEMPT period, taking into account changing conditions and the result of attempts to receive the rescue channel during previous SUB_ATTEMPT periods.

20. The method as recited in claim 18, wherein the probability values assigned to each of the BSs are adjustable to account for varying SUB_ATTEMPT durations, fades, degraded reception of the rescue channel, or pilot strength information made available to the network prior to a start of the potentially failing connection.

21. The method as recited in claim 16, wherein prior to executing the first search tree, the method further includes:

defining a plurality of search trees, each search tree for identifying the BS transmitting the rescue channel from within the plurality of BSs;

computing a time needed to traverse each search tree; and

identifying the first search tree as the search tree having a lowest traversal time.

22. The method as recited in claim 16, wherein prior to executing the first search tree, the method further includes utilizing dynamic programming or memo-ization algorithms to identify the first search tree as the search tree having a lowest traversal time.

-40-

23.   The method as recited in claim 22, further including executing the dynamic programming or memo-ization algorithms on generic N-sector search trees to identify the generic N-sector search tree having a lowest traversal time, and pre-storing resulting tree formulas for each of the N-sector trees having the lowest traversal times prior to a start of the potentially failing connection.

24.   In a system comprising a network and at least one mobile station (MS) for enabling communications with the at least one MS, one of the MSs having a connection with the network that has become a potentially failing connection and capable of receiving a rescue channel from one or more base stations (BSs) in the network for rescuing the connection, a method for assisting in synchronizing transmission of the rescue channel to increase a likelihood that the MS will receive the rescue channel and assist in rescuing the connection, the method comprising:

transmitting the rescue channel from one or more BSs at a time in a sequence, the sequence defined by network ordering criteria based on network probability values assigned to each of the BSs in the sequence, the network probability values representing a likelihood that the rescue channel transmitted by the BS will be received by the MS.

25.   The method as recited in claim 24, the MS for executing a first search tree within a first SUPER_ATTEMPT time interval to identify the BS transmitting the rescue channel, and prior to a start of the potentially failing connection, the method further including:

defining a plurality of search trees, each search tree for identifying the BS transmitting the rescue channel from within the plurality of BSs;

computing a time needed to traverse each search tree;

identifying the first search tree as the search tree having a lowest traversal time; and

communicating the first search tree to the MS.

26.   The method as recited in claim 25, further including utilizing dynamic programming or memo-ization algorithms to identify the first search tree as the search tree having a lowest traversal time.

27.   The method as recited in claim 26, further including executing the dynamic programming or memo-ization algorithms on generic N-sector search trees to identify the generic N-sector search tree having a lowest traversal time, and communicating tree formulas resulting from the execution of the dynamic programming or memo-ization algorithms for each of the N-sector trees having the lowest traversal times to the MS.

28.   A system for enabling communications between a network and a mobile station (MS) and for synchronizing transmission of a rescue channel with MS attempts at receiving the rescue channel when the MS has a connection with the network that has become a potentially failing connection, the synchronization for increasing a likelihood that the MS will receive the rescue channel and assist in rescuing the connection, the system comprising:

a network, the network including one or more base stations (BSs) and a network processor, the network processor programmed for transmitting a rescue channel from the one or more BSs during each of one or more SUPER_ATTEMPT time intervals; and

a MS communicatively coupled to the network and having a MS processor, the MS processor programmed for configuring the MS to attempt to receive the rescue channel from the one or more BSs during each of one or more SUB_ATTEMPT periods, wherein a predetermined number of SUB_ATTEMPT periods are contained in one SUPER_ATTEMPT time interval;

wherein the network and the MS coordinate the transmission of the rescue channel from the one or more BSs with the MS configurations to increase the likelihood that the MS is configured to receive the rescue channel from a particular BS at a time when the particular BS is transmitting the rescue channel.

29.   The system as recited in claim 28, the MS processor further programmed for configuring the MS to attempt to receive the rescue channel from one BS at a time in a sequence during each of the one or more SUB_ATTEMPT periods, the sequence defined by MS ordering criteria based on MS probability values assigned to each of the BSs in the sequence, the MS probability values representing the likelihood that the rescue channel transmitted by the BS will be received by the MS.

30.   The system as recited in claim 29, the MS processor further programmed for altering the sequence during each SUPER_ATTEMPT time interval by changing the MS ordering criteria at each SUPER_ATTEMPT time interval.

31.   The system as recited in claim 29, the network processor further

5   programmed for transmitting the rescue channel from the one or more BSs at a time in a sequence, the sequence defined by network ordering criteria based on network probability values assigned to each of the BSs in the sequence, the network probability values representing a likelihood that the rescue channel transmitted by the BS will be received by the MS.

32.   The system as recited in claim 28, the MS processor further programmed

10   for executing a first search tree within a first SUPER_ATTEMPT time interval, the execution of the first search tree comprising:

            configuring the MS during a first SUB_ATTEMPT period to attempt to receive the rescue channel from one or more BSs, and determining whether the attempt to receive the rescue channel from the one or more BSs resulted in the MS receiving the rescue

15   channel;

            selectively reconfiguring the MS during a subsequent SUB_ATTEMPT period to attempt to receive the rescue channel from a modified set of BSs in accordance with the first search tree and results from a previous SUB_ATTEMPT period, and determining whether the attempt to receive the rescue channel from the modified set of BSs resulted in the MS

20   receiving the rescue channel;

            repeating the selective reconfiguration of the MS and the attempts to receive the rescue channel as dictated, if at all, by the first search tree and the results of previous selective reconfigurations; and

            terminating the selective reconfiguration of the MS and the attempts to

25   receive the rescue channel when an end of the first search tree is reached, or the BS transmitting the rescue channel is identified, or when an end of the first SUPER_ATTEMPT time interval is reached.

33.   The system as recited in claim 32, the MS processor further programmed for executing one or more different search trees in subsequent SUPER_ATTEMPT time intervals for identifying one or more BSs transmitting the rescue channel.

34.   The system as recited in claim 32, the MS processor further programmed

5   for applying probability values assigned to each of the BSs to the steps of configuring the MS during the first SUB_ATTEMPT period, selectively reconfiguring the MS during the subsequent SUB_ATTEMPT period, and repeating the selective reconfiguration of the MS and the attempts to receive the rescue channel, the probability values representing a likelihood that the rescue channel transmitted by the BS will be received by the MS.

35.   The system as recited in claim 34, the MS processor further programmed for recomputing the probability values assigned to each of the BSs at each SUB_ATTEMPT period, taking into account changing conditions and the result of attempts to receive the rescue channel during previous SUB_ATTEMPT periods.

36.   The system as recited in claim 34, the MS processor further programmed

15   for adjusting the probability values assigned to each of the BSs to account for varying SUB_ATTEMPT durations, fades, degraded reception of the rescue channel, or pilot strength information made available to the network prior to a start of the potentially failing connection.

37.   The system as recited in claim 32, the MS processor is further programmed for, prior to executing the first search tree:

20   defining a plurality of search trees, each search tree for identifying the BS transmitting the rescue channel from within the plurality of BSs;

computing a time needed to traverse each search tree; and

identifying the first search tree as the search tree having a lowest traversal time.

25   38.   The system as recited in claim 32, the MS processor further programmed for, prior to executing the first search tree, utilizing dynamic programming or memo-ization algorithms to identify the first search tree as the search tree having a lowest traversal time.

39.   The system as recited in claim 38, the MS processor further programmed for executing the dynamic programming or memo-ization algorithms on generic N-sector search trees to identify the generic N-sector search tree having a lowest traversal time, and pre-storing resulting tree formulas for each of the N-sector trees having the lowest traversal times prior to a

5   start of the potentially failing connection.

40.   A mobile station (MS) for communicating with a network and for assisting in rescuing the MS when the MS has a connection with the network that has become a potentially failing connection, the network including one or more base stations (BSs) capable of transmitting a rescue channel during each of one or more SUPER_ATTEMPT time intervals to

10   the MS, the MS comprising:

a MS processor programmed for

configuring the MS to attempt to receive the rescue channel from the one or more BSs during each of one or more SUB_ATTEMPT periods, wherein a predetermined number of SUB_ATTEMPT periods are contained in one SUPER_ATTEMPT

15   time interval, and

coordinating the transmission of the rescue channel from the one or more BSs with the MS configurations to increase the likelihood that the MS is configured to receive the rescue channel from a particular BS at a time when the particular BS is transmitting the rescue channel.

20   41.   The MS as recited in claim 40, the MS processor further programmed for configuring the MS to attempt to receive the rescue channel from one BS at a time in a sequence during each of the one or more SUB_ATTEMPT periods, the sequence defined by MS ordering criteria based on MS probability values assigned to each of the BSs in the sequence, the MS probability values representing the likelihood that the rescue channel transmitted by the BS will

25   be received by the MS.

42.   The MS as recited in claim 41, the MS processor further programmed for altering the sequence during each SUPER_ATTEMPT time interval by changing the MS ordering criteria at each SUPER_ATTEMPT time interval.

43. The MS as recited in claim 40, the MS processor further programmed for executing a first search tree within a first SUPER_ATTEMPT time interval, the execution of the first search tree comprising:

configuring the MS during a first SUB_ATTEMPT period to attempt to

5 receive the rescue channel from one or more BSs, and determining whether the attempt to receive the rescue channel from the one or more BSs resulted in the MS receiving the rescue channel;

selectively reconfiguring the MS during a subsequent SUB_ATTEMPT period to attempt to receive the rescue channel from a modified set of BSs in accordance with the

10 first search tree and results from a previous SUB_ATTEMPT period, and determining whether the attempt to receive the rescue channel from the modified set of BSs resulted in the MS receiving the rescue channel;

repeating the selective reconfiguration of the MS and the attempts to receive the rescue channel as dictated, if at all, by the first search tree and the results of previous

15 selective reconfigurations; and

terminating the selective reconfiguration of the MS and the attempts to receive the rescue channel when an end of the first search tree is reached, or the BS transmitting the rescue channel is identified, or when an end of the first SUPER_ATTEMPT time interval is reached.

20 44. The MS as recited in claim 43, the MS processor further programmed for executing one or more different search trees in subsequent SUPER_ATTEMPT time intervals for identifying one or more BSs transmitting the rescue channel.

45. The MS as recited in claim 43, the MS processor further programmed for applying probability values assigned to each of the BSs to the steps of configuring the MS during

25 the first SUB_ATTEMPT period, selectively reconfiguring the MS during the subsequent SUB_ATTEMPT period, and repeating the selective reconfiguration of the MS and the attempts to receive the rescue channel, the probability values representing a likelihood that the rescue channel transmitted by the BS will be received by the MS.

46.   The MS as recited in claim 45, the MS processor further programmed for recomputing the probability values assigned to each of the BSs at each SUB_ATTEMPT period, taking into account changing conditions and the result of attempts to receive the rescue channel during previous SUB_ATTEMPT periods.

47.   The MS as recited in claim 45, the MS processor further programmed for adjusting the probability values assigned to each of the BSs to account for varying SUB_ATTEMPT durations, fades, degraded reception of the rescue channel, or pilot strength information made available to the network prior to a start of the potentially failing connection.

48.   The MS as recited in claim 43, the MS processor further programmed for, prior to executing the first search tree:

defining a plurality of search trees, each search tree for identifying the BS transmitting the rescue channel from within the plurality of BSs;

computing a time needed to traverse each search tree; and

identifying the first search tree as the search tree having a lowest traversal time.

49.   The MS as recited in claim 43, the MS processor further programmed for, prior to executing the first search tree, utilizing dynamic programming or memo-ization algorithms to identify the first search tree as the search tree having a lowest traversal time.

50.   The MS as recited in claim 49, the MS processor further programmed for executing the dynamic programming or memo-ization algorithms on generic N-sector search trees to identify the generic N-sector search tree having a lowest traversal time, and pre-storing resulting tree formulas for each of the N-sector trees having the lowest traversal times prior to a start of the potentially failing connection.

51.   A system for enabling communications with at least one mobile station (MS) and for assisting in rescuing a MS having a connection with the network that has become a potentially failing connection, the MS capable of receiving a rescue channel for rescuing the connection, the system for assisting in synchronizing transmission of the rescue channel to

5   increase a likelihood that the MS will receive the rescue channel and assist in rescuing the connection, the system comprising:

a network, the network including one or more base stations (BSs) capable of transmitting the rescue channel during each of one or more SUPER_ATTEMPT time intervals, and a network processor programmed for transmitting the rescue channel from one or

10   more BSs at a time in a sequence, the sequence defined by network ordering criteria based on network probability values assigned to each of the BSs in the sequence, the network probability values representing a likelihood that the rescue channel transmitted by the BS will be received by the MS.

52.   The system as recited in claim 51, the MS for executing a first search tree

15   within a first SUPER_ATTEMPT time interval to identify the BS transmitting the rescue channel, the network processor further programmed for, prior to a start of the potentially failing connection:

defining a plurality of search trees, each search tree for identifying the BS transmitting the rescue channel from within the plurality of BSs;

20   computing a time needed to traverse each search tree;

identifying the first search tree as the search tree having a lowest traversal time; and

communicating the first search tree to the MS.

53.   The system as recited in claim 52, the network processor further

25   programmed for utilizing dynamic programming or memo-ization algorithms to identify the first search tree as the search tree having a lowest traversal time.

54. The system as recited in claim 53, the network processor further programmed for executing the dynamic programming or memo-ization algorithms on generic N-sector search trees to identify the generic N-sector search tree having a lowest traversal time, and communicating tree formulas resulting from the execution of the dynamic programming or

5   memo-ization algorithms for each of the N-sector trees having the lowest traversal times to the MS.

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